



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

learn about cloud formation and the effects they have on our weather and environment. You will work best with an adult in this weather science activity. You will need just a few materials and a spark of curiosity to make a cloud in a jar!



Supplies Required:

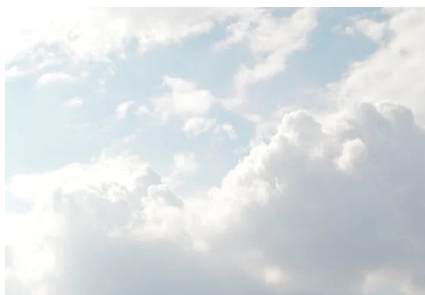
Mason jar with lid or plastic mayo jar with lid
Warm water
Ice cubes
Aerosol hairspray

Video

Listen to [Cyril the Lonely Cloud](https://tinyurl.com/r8ypu5u) before beginning the activity: <https://tinyurl.com/r8ypu5u>

Overview

Meteorology is a branch of science that is focused on weather forecasting. Meteorology is the study of the atmosphere. Sometimes when we see clouds we think that rain won't be far behind. As we learned from the story, [Cyril the Lonely Cloud](#), sometimes we are happy to see clouds and sometimes we're not. Most clouds form as warm air rises in the atmosphere and cools down. All air contains some water vapor, and warm air can hold more water vapor than cold air. Clouds are made up of tiny droplets or frozen crystals of water. You will be able to see something like this as you make a cloud in a jar. The more the air cools down, more droplets form and eventually the droplets become a cloud! Some clouds come with precipitation (rain, snow, sleet, hail), which is a product of the water vapor from the cloud. To make your cloud you will need warm moist air, and then a cooling process. By pouring warm water into a jar and trapping it, you create the first step, which is warm moist air! This warm air rises and meets with the cool air at the top of the jar which is made by the ice cubes. The hairspray provides the cloud nuclei.



Instructions

1. Have an adult to assist if needed: Pour very warm water (not boiling) into the jar.
2. Swirl it around to warm the inside of the whole jar.
3. Turn the lid upside down and place several ice cubes on top of it.
4. Set the lid on top of the jar.
5. Quickly remove the lid and give a quick spray of the hairspray.
6. Replace the lid.
7. Remove the lid and watch the cloud escape!

Additional Resources

Think About It! Look outside, what type of clouds are forming today? What could you share with friends about clouds and how they affect our weather?

1. Explore ways to make a cloud: <https://tinyurl.com/wf5qj7m>
2. Learn more about clouds: <https://tinyurl.com/p23azoj>
3. Learn to predict the weather by observing the clouds: <https://tinyurl.com/vdms9ym>

Share It Out

Share on social media: take a picture of the sky today and explain the clouds! Tag the Weather Channel, Al Roker, or the local news station and share your knowledge!

Use the hashtags:

#CloudReadAlong
#ProjectExploration
#SteamAtHome
#cloudtravel
#cloudtalk

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 105. Learn more at www.projectexploration.org/explore-store

Join PE's character contest!

Design a STEM character who will lead kids through activities and be featured on our website and in our STEMbooks. Cash prizes will be awarded to the top 3 finalists. Learn more at: www.projectexploration.org/character-contest.



Need help? Call us: 312-772-6634

www.projectexploration.org